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NS 1.2: P56

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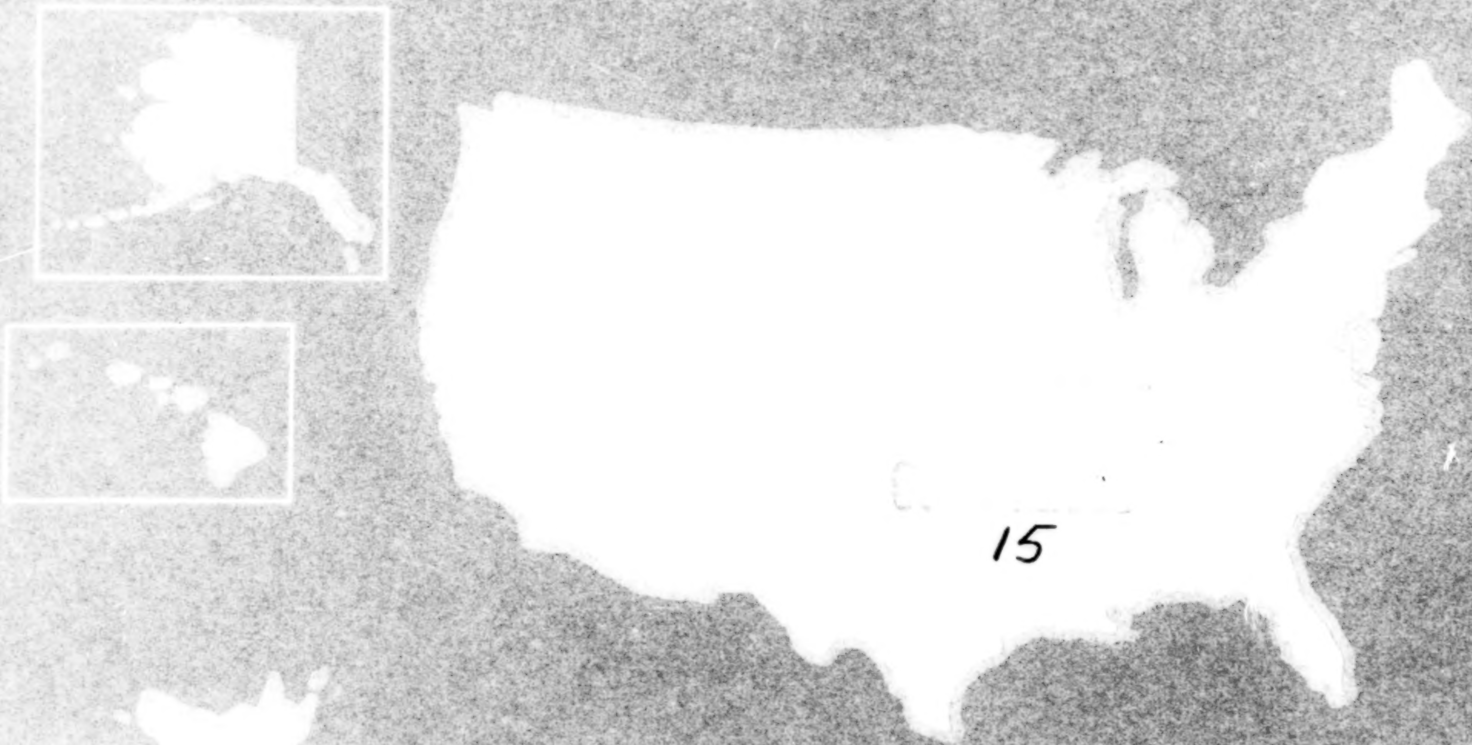
PROGRAM ANNOUNCEMENT



15

UNITED STATES-JAPAN PROGRAM OF COOPERATION IN PHOTOCONVERSION AND PHOTOSYNTHESIS

NATIONAL SCIENCE FOUNDATION
Directorate For Scientific, Technological
And International Affairs
Division Of International Programs

NS1.2: P56

United States-Japan Program of Cooperation in Photoconversion and Photosynthesis

BACKGROUND OF THE PROGRAM

On September 30, 1981, the United States and Japan exchanged letters constituting a protocol under the U.S.-Japan Energy Research and Development Agreement for cooperation in research on photoconversion and photosynthesis. In the United States the National Science Foundation and the Department of Energy serve as the implementing agencies, and in Japan the Ministry of Education, Science and Culture (Monbusho) and the Science and Technology Agency (STA) provide this function. These implementing agencies have agreed to support a Cooperative Photoconversion and Photosynthesis Research Program in the following scientific areas:

- Basic photosynthetic processes
- Hydrogen production
- Regulation of carbon assimilation
- Determinants of biomass productivity
- Artificial photosynthesis
- Photoelectrochemistry
- Photochemistry
- Photocatalysis
- Molecular energy storage

The protocol is designed to foster the following modes of cooperation: seminars to discuss and exchange scientific and technical information and to identify cooperative projects and programs; exchanges of information on activities, policies and practices related to the Program; visits and exchanges of scientists on general or specific subjects; experiments and tests which may include joint use of facilities and equipment; cooperative projects and programs including technical collaboration; and other mutually agreed forms of cooperative activities. The specific kinds of support available under the Program vary according to the category of activity; in general, funds are provided to help defray the costs of expanding the cooperating investigators' respective domestic research into a bilateral, collaborative effort. Thus funds from the Program will normally supplement primary support from another source. The proposal guidelines, beginning on page 2, provide detailed information on the allowable costs for each of the activity categories listed below under Scope of the Program.

The initial activity conducted under the Program was a seminar which identified promising areas of collaborative research. A summary report of this seminar may be obtained from the U.S.-Japan Programs, Division of International Programs, National Science Foundation, Washington DC 20550.

Responsibility for policies, guidance and general oversight of the Program is vested in a Steering Committee which meets periodically to review and recommend activities to the implementing agencies of the two governments. The following general guidelines for the administration of the Program have been adopted by the Steering Committee: both Japan and the United States must participate in each project included under the program; both countries must agree to each project—neither country will fund a project without the agreement of the other; the Japanese Government supports the Japanese scientists receiving support under the Program, and the United States Government supports American scientists.

The Steering Committee has stated the following principles which should be satisfied in both countries in order to assure effective and harmonious scientific cooperation: activities must be of high quality and beneficial to the advancement of science; all cooperation should be performed on a basis of mutuality and equality; at least one qualified scientist from each country, with personal dedication to the project, should participate in each project; and scientists of each country participate in their capacities as individuals. Within the protocol there are agreements between the two countries respecting the disposition of patent rights.

SCOPE OF THE PROGRAM

Funds are available to support projects designed to take U.S. scientists to Japan to use specialized or innovative facilities, equipment, techniques or expertise. The categories of support include:

- Project Development Visits
- Long-term Visits for Research (3 to 12 months)
- Short-term Visits for Research (1 to six weeks per year)

VISITS FOR PROJECT DEVELOPMENT

Visits will be supported to Japan, not exceeding two weeks duration, to allow scientists to work more closely with a Japanese colleague in the development of a project for a Long-term or a Short-term Photoconversion/Photosynthesis Research Visit. Proposals for project development visits may be submitted in letter form. An invitation from the Japanese scientist, including a description of efforts to date to establish a collaborative arrangement, should be furnished.

LONG-TERM VISITS FOR RESEARCH

This activity is designed to enable U.S. scientists to visit Japan to conduct research in collaboration with Japanese scientists at a research center or laboratory which provides unique opportunities for the U.S. investigator. Prior to the submission of a formal proposal, interested U.S. scientists should correspond with their Japanese colleagues to establish and coordinate the objectives and research activity for the proposed visit. Scientists are also advised to communicate with NSF or DOE respresentatives prior to the submission of a proposal to learn of any special conditions which might affect their proposed stay in Japan. The duration of the visit may be from three to twelve months, with the stay usually being spent at a single research institution. Both established scientists and recent doctoral degree recipients are encouraged to participate in this activity. Concurrence of a Japanese Implementing Agency must be obtained by NSF or DOE before an award can be made. For visits up to six months, the award provides stipend and international travel expenses for the investigator. Travel expenses, housing and dependent schooling allowances for accompanying dependents will also be provided for stays of longer than six months at currently established rates.

SHORT-TERM VISITS FOR RESEARCH

Proposals for short-term cooperative research projects are considered by the Program when special benefits can be expected from such collaboration: sharing of unusual facilities and research environments, joining of complementary skills in experimentation and theoretical analysis, or combined use of resources in solving problems of common concern. The proposed cooperation should be of clear-cut benefit to the U.S. effort in photoconversion and photosynthesis research. Primary financial support for a project (e.g., salaries, equipment, publication charges) must come from sources other than the photoconversion/photosynthesis program. Such support may come from the research divisions of NSF, DOE, other Government agencies, non-profit institutions, universities, or other funding sources. This Program can consider requests only for supplemental support (e.g., international travel costs and per diem expenses, material shipment, communications, etc.) needed to expand a domestic project into a bilateral one. The duration of visits to Japan may vary from one to six weeks, and support may be requested for a single visit per investigator per year. Projects of up to two years' duration may be approved. Support for Japanese participation in this activity is provided by Japanese agencies.

PROPOSALS

All projects supported by the U.S. Implementing Agencies will be selected on the basis of proposals submitted to the National Science Foundation. Except as modified in these guidelines, standard NSF guidelines on eligibility, proposal preparation, proposal submission, evaluation, NSF grant awards, and declinations and withdrawals contained in *Grants for Scientific and Engineering Research* (NSF 81-79, or updated editions) are applicable. This publication is available on request from the Forms and Publications Unit, NSF, 1800 G Street, N.W., Washington, DC 20550. The proposal submitted to NSF should be self-contained and written with the care and thoroughness accorded papers prepared for publication. The checklist on page 14 summarizes the proposal submission requirements. Further information may be obtained by calling the United States-Japan Program at NSF, 202-357-9537. Program activities described in this publication are in category 47.053 (Scientific, Technological, and International Affairs) in the Catalog of Federal Domestic Assistance.

ELIGIBILITY

Only those proposals which are in the scientific areas of photoconversion and photosynthesis are eligible for consideration. In general, proposals may be submitted by U.S. academic institutions, by U.S. non-profit, non-academic research institutions, or by unaffiliated U.S. scientists and engineers. The principal investigator must be a U.S. scientist with a doctoral degree or equivalent professional experience. A U.S. scientist is any recognized member of the U.S. scientific community irrespective of nationality, who performs work in the United States. *It is the policy of the NSF to encourage minorities and women to compete in this Program.*

PROJECT DEVELOPMENT VISITS

Format

Proposals may be in letter form addressed to the U.S.-Japan Photoconversion/Photosynthesis Program. This letter should contain all the information needed for a definitive evaluation and consist of the following parts:

- Summary and Background—a summary of the dates and duration of the requested visit, the Japanese scientist(s) to be visited (with addresses, affiliations, and titles), and the research topics to be discussed. A statement of the efforts to date to establish collaboration on the desired topic, and an invitation to visit from the proposed Japanese collaborator are desirable.
- Objective—a brief statement of the specific objective of the proposed visit.
- Current Support—a brief summmary of current and pending research support of the U.S. investigator.
- Biographical Information—a brief biography should be appended to the letter. Extensive lists of publications are not desired.

The funding request letter should be signed by the principal investigator; institutional counter-signature is optional. The Check List for Proposal Submission found on page 14 does not apply.

Submission

Proposal letters for project development visits will be accepted at any time. The applicant should submit an original and five copies of the proposal letter to the U.S.-Japan Photoconversion/Photosynthesis Program, Division of International Programs, National Science Foundation, Washington, DC 20550.

Evaluation

Evaluation of project development visit proposals involves both U.S. Implementing Agencies and utilizes the peer review mechanisms used by NSF. Consideration in review will be given to factors such as the likelihood that the visit will result in the submission of a research proposal and the track record or potential of the investigator. The approval of the cognizant Japanese Implementing Agency to the visit must be received before an award can be made. Since Program funds are limited, consideration will also be given to balance among research topics and geographic distribution in the United States in establishing priorities for proposals of substantially equal merit.

Awards

Awards will be made in the form of a round trip air ticket at the lowest available fare using a U.S. flag air carrier from the investigator's home airport to the destination in Japan; the ticket will be provided through a contractor of NSF. This contractor will also make reimbursement for per diem and limited ground transportation expenses at the end of the trip. Reimbursement will not be made for airfare tickets which the investigator might purchase on his or her own behalf, or through a travel agent.

Reports

The required report for a project development visit shall be a long-term or short-term research visit proposal submitted to the Program by the next formal proposal deadline following the completion of the initial visit. In the event that such a proposal could not be developed, the final report shall consist of a summary of the discussion held between the U.S. and Japanese scientist(s) and an explanation of why the anticipated cooperation failed to materialize.

LONG-TERM VISITS FOR RESEARCH

Format

A proposal for a long-term visit consists of the following parts, assembled in sequence:

Cover Page. Use form provided on page 6. The title should be brief, and while scientifically meaningful, it should be as intelligible as possible to non-scientists, and suitable for use in the public press. The title itself should not mention the collaborating institutions. At the upper left of the form, the Program should be identified as U.S.-Japan Program in Photoconversion/Photosynthesis. Proposals for fiscal 1983 may be submitted at any time prior to May 15, 1983. In subsequent years the closing date for receipt of proposals will be January 15.

Proposal Information Page. Use form provided on page 8.

Table of Contents. Any appendices should be characterized as to content.

Project Summary. Use NSF Form 4 provided on page 9. A self-contained summary of not more than 200 words, which describes the relevant scientific objectives and methods, the nature of the collaborative effort, and the significance of the proposed activity to the advancement of scientific knowledge, will serve as an abstract of the proposed project. It should mention the collaborating institutions and their primary roles in the research. Insofar as possible, the abstract should avoid technical jargon and abbreviations and be expressed in language that can be understood by an intelligent layperson.

Research Description. This should include comprehensive details of the U.S.-Japan cooperative aspects and justification for conducting this scientific research in Japan; a brief description of the facilities that will be utilized in the project should be included.

Expected Scientific Benefits. Expected scientific benefits to the applicant and to U.S. science should be detailed. Expected benefits to Japanese science should also be discussed. This section should include an assessment of new knowledge and, if appropriate, of any applications and practical results that might be expected.

Copies of Correspondence showing that a Japanese collaborator is interested in working with the applicant and will provide necessary supporting facilities should be included.

Information on Previous Professional Visits to Japan.

Current and Pending Research Support. If the primary research support is from anywhere except another NSF office, the Department of Energy, or the applicant's institution, the applicant should request that a letter be sent acknowledging potential benefit to be derived through the inclusion of the project under the U.S.-Japan Photoconversion/Photosynthesis Program and assuring that activity covered by an award would not duplicate that already being supported. When primary support is currently ongoing, this letter should be submitted at the same time the proposal is submitted to NSF; when primary support is pending, the letter should be submitted at the time of primary funding. See NSF publication No. 81-79 ("Grants for Scientific and Engineering Research") for additional requirements.

Budget. The budget must be prepared on NSF form 1030, Summary Proposal Budget. A copy of the budget form is found on page 10. Specific program allowable costs are:

- Item A. Senior Personnel—a stipend may be claimed to help compensate for anticipated salary loss from the applicant's home institution during residence abroad. For full-time effort the allowance requested should be based on normal salary minus the support to be received for the duration of the visit from the home institution and other sources; the source and dollar amount of this support must be specified. The stipend should not be calculated on the basis of person-months of effort but rather on the length of residence abroad. For less than full-time effort the request should reflect time devoted to the project.

- Item C. Fringe Benefits—are allowable on that portion of the stipend provided in lieu of salary. The stipend, including fringe benefits, is limited to a maximum monthly amount. Total compensation, salary and fringe benefits may not exceed what the investigator's salary and fringe benefits would have been during the same period in the U.S. The determination of requested stipend and fringe benefits should be detailed on an explanation page following the budget form.
- Item E. International Travel—actual cost of round-trip economy fare, via U.S. carriers for the international portion of travel, for the visiting scientists; and, for visits six months or over, up to three accompanying dependents; provide detail on budget explanation page. If necessary, an excess baggage allowance should be included with this item.
- Item G. Other Direct Costs—if necessary, housing and dependent education should be included under G.6 "Other", and explained.
- Item I. Indirect Costs—a fixed amount of $250 will be provided the awardee's institution, in lieu of indirect costs, to help defray administrative expenses.

Biographical Information and List of Relevant Publications for both the U.S. and Japanese principal investigators should be provided.

Submission

Proposals for long-term visits are due before May 15, 1983 and January 15 in subsequent years. Applicants should allow six months for a decision to be reached, including Japanese concurrence. Applicants should submit 12 copies of the proposal to: Central Processing Section, U.S.-Japan Photoconversion/Photosynthesis Program, National Science Foundation, Washington, DC 20550.

Evaluation

Evaluation of long-term visit proposals will be based on the proposal's merits, and involves both U.S. Implementing Agencies and the NSF peer review procedures. Consideration in the evaluation of proposals will be given to these factors: the merit of the proposed research including its potential for generating new scientific knowledge; the competence and complementarity of the U.S. and Japanese scientists; the prospective scientific benefit to the U.S. and Japan; and, the unique factors which contribute toward the advantages of conducting the research in Japan. Since funds are limited, consideration will also be given to balance among disciplines or research topics, and geographic distribution, in establishing priorities for proposals of substantially equal merit.

Final Report

The visiting scientist is required to submit a final technical report and a summary description of research conducted in Japan. (See Form 98A on pages 12 and 13.) In addition to a detailed account of the research activity conducted in Japan, the scientist should note his Japanese collaborators, institutions visited, travel in Japan, and provide a self evaluation of the total contribution of the visit.

SHORT-TERM VISITS FOR RESEARCH

Format

A proposal for short-term photoconversion/photosynthesis research visits of from one to six weeks per year should consist of the same format as that described on pages 3 to 4 for the *Long-Term Visits for Research.*

In preparing the budget for a Short-Term Visit proposal the following items should be considered. The Program does not provide primary support but rather can consider requests only for supplemental support to facilitate the research of the American investigator while the activity is being conducted in Japan. Travel and per diem for short research visits are the most common costs provided, although support for shipment of materials, field expenses in Japan, and other reasonable charges directly attributable to the U.S. portion of the joint effort may also be appropriate. The following travel related costs are allowed:

- A round-trip ticket at the lowest available rate between the applicant's home airport and the Japanese destination. Use of U.S. Flag carriers by successful applicants is required. In accordance with NSF requirements that each foreign trip be approved, the budget must specify the individual to be supported by funds requested for travel (note on budget item E and explain on attached sheet).
- Per diem for a limited period not to exceed the current U.S. Government rate. Per diem is limited to a maximum of 42 days per investigator per year (budget item E and explain on attachment).

The amount for transportation and per diem should be itemized separately, and the length of the proposed visit(s) specified.

Submission

The deadline dates for the receipt of Short-Term Visits for research proposals are the same as for the Long-Term Visits, May 15, 1983, and on January 15 in subsequent years. The applicant should submit 12 copies of the proposal to:

Central Processing Section
U.S.-Japan Photoconversion/Photosynthesis Program
National Science Foundation
Washington, DC 20550.

Evaluation

The evaluation procedures and criteria for the Short-Term Visits are the same as those described on this page for the Long-Term Visit Proposals.

Reporting Requirements

NSF grant regulations require annual progress reports under multi-year awards. Two copies of a comprehensive final technical report must be submitted to the Program within 90 days of the expiration of the grant. A "Summary of Completed Project" (NSF Form 98A) is also required at that time; the applicant's institution can provide copies of that form and is responsible for submitting it to the NSF Division of Grants and Contracts as part of the award close-out process.

Grantees are encourage to contact the Program staff any time they encounter problems or serious delays in carrying out their research. The staff would also appreciate being informed of any unusual or interesting accomplishments that might warrant citation in the annual Program report or even as a press release. Interesting photographs of "research in action" are appreciated.

PROPOSAL TO THE NATIONAL SCIENCE FOUNDATION
Cover Page

FOR CONSIDERATION BY NSF ORGANIZATIONAL UNIT (Indicate the most specific unit known, i.e. program, division, etc.)	IS THIS PROPOSAL BEING SUBMITTED TO ANOTHER FEDERAL AGENCY? Yes ____ No ____ ; IF YES, LIST ACRONYM(S):
PROGRAM ANNOUNCEMENT/SOLICITATION NO.:	CLOSING DATE (IF ANY):

NAME OF SUBMITTING ORGANIZATION TO WHICH AWARD SHOULD BE MADE (INCLUDE BRANCH/CAMPUS/OTHER COMPONENTS)

ADDRESS OF ORGANIZATION (INCLUDE ZIP CODE)

TITLE OF PROPOSED PROJECT

REQUESTED AMOUNT	PROPOSED DURATION	DESIRED STARTING DATE
PI/PD DEPARTMENT	PI/PD ORGANIZATION	PI/PD PHONE NO.

PI/PD NAME	SOCIAL SECURITY NO.*	DATE OF HIGHEST DEGREE ACHIEVED*	MALE*	FEMALE*
ADDITIONAL PI/PD				
ADDITIONAL PI/PD				
ADDITIONAL PI/PD				
ADDITIONAL PI/PD				

FOR RENEWAL OR CONTINUING AWARD REQUEST, LIST PREVIOUS AWARD NO.:	IF SUBMITTING ORGANIZATION IS A SMALL BUSINESS CONCERN, CHECK HERE ☐ (See CFR Title 13, Part 121 for Definitions)

*Submission of SSN and other personal data is voluntary and will not affect the organization's eligibility for an award. However, they are an integral part of the NSF information system and assist in processing proposals. SSN solicited under NSF Act of 1950, as amended.

CHECK APPROPRIATE BOX(ES) IF THIS PROPOSAL INCLUDES ANY OF THE ITEMS LISTED BELOW:

- ☐ Animal Welfare
- ☐ Endangered Species
- ☐ Historical Sites
- ☐ Human Subjects
- ☐ Marine Mammal Protection
- ☐ Pollution Control
- ☐ National Environmental Policy Act
- ☐ Research Involving Recombinant DNA Molecules
- ☐ Proprietary and Privileged Information

PRINCIPAL INVESTIGATOR/ PROJECT DIRECTOR	AUTHORIZED ORGANIZATIONAL REP.	OTHER ENDORSEMENT (optional)
NAME	NAME	NAME
SIGNATURE	SIGNATURE	SIGNATURE
TITLE	TITLE	TITLE
DATE	DATE	DATE

BEST DOCUMENT AVAILABLE

FORM APPROVED
OMB No. 3145-0058

Clip One Copy Only to the Face Page of the Signature Copy of the Application:

Supplementary Information

PRINCIPAL INVESTIGATOR(S)/PROJECT DIRECTOR(S)

The National Science Foundation has an obligation to monitor the operation of its award process to assess patterns of sex, race, or ethnicity among proposed Principal Investigators/Project Directors.

To provide the NSF with the information it needs for this important task, the Principal Investigator(s)/Project Director(s) is (are) requested to complete this form and attach a single copy to the face page of the signature copy of the application. Submission of this information is optional (but is strongly encouraged).

Upon receipt and assignment of the application by the NSF, this form will be detached from the application. It will *NOT* be duplicated, will *NOT* be made available to the NSF Program Officer, and will *NOT* be a part of the review process. Data will be confidential, and will be maintained in secure data files in accordance with the Privacy Act of 1974. All analyses conducted on the data will report aggregate statistical findings only and will not identify individuals.

Whether you do or do not provide this information will in no way affect consideration of an application.

Where only one Principal Investigator/Project Director is involved, simply check the appropriate boxes. If there are two or more, enter the appropriate numbers in the boxes.

Sex: ☐ Female ☐ Male

Race and/or Ethnic Origin:

☐ American Indian or Alaskan Native
☐ Asian or Pacific Islander
☐ Black, not of Hispanic origin
☐ Hispanic
☐ White, not of Hispanic origin

NOTE: The category that most closely reflects the individual's recognition in the community should be used for the purposes of reporting mixed racial and/or ethnic origins. Definitions follow.

American Indian or Alaskan Native
A person having origins in any of the original peoples of North America, and who maintains cultural identification through tribal affiliation or community recognition.

Asian or Pacific Islander
A person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands. This area includes, for example, China, India, Japan, Korea, the Philippine Islands and Samoa.

Black, not of Hispanic origin
A person having origins in any of the black racial groups of Africa.

Hispanic
A person of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish culture or origin, regardless of race.

White, not of Hispanic origin
A person having origins in any of the original peoples of Europe, North Africa, or the Middle East.

NATIONAL SCIENCE FOUNDATION

U.S. DEPARTMENT OF ENERGY

United States-Japan Program of Cooperation
in Photoconversion and Photosynthesis

PROPOSAL INFORMATION PAGE

Proposal Category: ( ) Long-term Visit

( ) Short-term Visit

Content Category:

- ( ) Basic photosynthetic processes
- ( ) Hydrogen production
- ( ) Regulation of carbon assimilation
- ( ) Determinants of biomass productivity
- ( ) Artificial photosynthesis
- ( ) Photoelectrochemistry
- ( ) Photochemistry
- ( ) Photocatalysis
- ( ) Molecular energy storage

Name & Title of Japanese Investigator: Organizational Address:

Department:

Name, Title, Department & Institutional Affiliation of all U.S. Scientists, including the principal investigator, for which travel support to Japan is being requested in this proposal.

NATIONAL SCIENCE FOUNDATION

PROJECT SUMMARY

NSF AWARD NO.

FOR NSF USE ONLY

DIRECTORATE/DIVISION	PROGRAM OR SECTION	PROPOSAL NO.	F.Y.

NAME OF INSTITUTION (INCLUDE BRANCH/CAMPUS AND SCHOOL OR DIVISION)

ADDRESS (INCLUDE DEPARTMENT)

PRINCIPAL INVESTIGATOR(S)

TITLE OF PROJECT

TECHNICAL ABSTRACT (LIMIT TO 22 PICA OR 18 ELITE TYPEWRITTEN LINES)

INSTRUCTIONS

1. Program Office will complete all items except Award No.; place Proposal Folder copy in folder; retain Program Suspense copy; and place remaining copies inside folder envelope.
2. Division of Grants and Contracts will post award number on copies 3 through 6 and distribute these copies.

NSF FORM 4 (8-80) EXISTING STOCKS OF FORM 4 (7-78) WILL BE USED

(SEE INSTRUCTIONS ON REVERSE BEFORE COMPLETING)

SUMMARY PROPOSAL BUDGET

ORGANIZATION	**FOR NSF USE ONLY** PROPOSAL NO.	DURATION (MONTHS) Proposed	Granted
PRINCIPAL INVESTIGATOR/PROJECT DIRECTOR	AWARD NO.		

A. SENIOR PERSONNEL: PI/PD, Co-PI's, Faculty and Other Senior Associates (List each separately with title; A.6. show number in brackets)	NSF FUNDED PERSON-MOS. CAL.	ACAD	SUMR	FUNDS REQUESTED BY PROPOSER	FUNDS GRANTED BY NSF (IF DIFFERENT)
1.				$	$
2.					
3.					
4.					
5. ( ) OTHERS (LIST INDIVIDUALLY ON BUDGET EXPLANATION PAGE)					
6. ( ) TOTAL SENIOR PERSONNEL (1-5)					
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)					
1. ( ) POST DOCTORAL ASSOCIATES					
2. ( ) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)					
3. ( ) GRADUATE STUDENTS					
4. ( ) UNDERGRADUATE STUDENTS					
5. ( ) SECRETARIAL-CLERICAL					
6. ( ) OTHER					
TOTAL SALARIES AND WAGES (A+B)					
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)					
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A+B+C)					
D. PERMANENT EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING $1,000; ITEMS OVER $10,000 REQUIRE CERTIFICATION)					
TOTAL PERMANENT EQUIPMENT					
E. TRAVEL 1. DOMESTIC (INCL. CANADA AND U.S. POSSESSIONS)					
2. FOREIGN					
F. PARTICIPANT SUPPORT COSTS 1. STIPENDS $ ________ 2. TRAVEL ________ 3. SUBSISTENCE ________ 4. OTHER ________					
TOTAL PARTICIPANT COSTS					
G. OTHER DIRECT COSTS					
1. MATERIALS AND SUPPLIES					
2. PUBLICATION COSTS/PAGE CHARGES					
3. CONSULTANT SERVICES					
4. COMPUTER (ADPE) SERVICES					
5. SUBCONTRACTS					
6. OTHER					
TOTAL OTHER DIRECT COSTS					
H. TOTAL DIRECT COSTS (A THROUGH G)					
I. INDIRECT COSTS (SPECIFY)					
TOTAL INDIRECT COSTS					
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)					
K. RESIDUAL FUNDS (IF FOR FURTHER SUPPORT OF CURRENT PROJECTS GPM 252 AND 253)					
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)				$	$

PI/PD TYPED NAME & SIGNATURE*	DATE	**FOR NSF USE ONLY** INDIRECT COST RATE VERIFICATION		
INST. REP. TYPED NAME & SIGNATURE*	DATE	Date Checked	Date of Rate Sheet	Initials - DGC Program

NSF Form 1030 (3-83) *Supersedes All Previous Editions*

*SIGNATURES REQUIRED ONLY FOR REVISED BUDGET (GPM 233)

INSTRUCTIONS FOR USE OF SUMMARY PROPOSAL BUDGET (NSF FORM 1030) (10-80)

1. General

a. Each grant proposal, including requests for supplemental or incremental funding, must contain a Summary Proposal Budget in this format unless a pertinent program guideline specifically provides otherwise.

b. Copies of NSF Form 1030 and instructions should be reproduced locally as NSF will not supply the form.

c. A separate form should be completed for each year of support requested. An additional form showing the cumulative budget for the full term requested should be completed for proposals requesting more than one year's support. Identify each year's request (e.g., "First year __________," or "Cumulative Budget," etc.) in the margin at the top right of the form.

d. Completion of this summary does not eliminate the need to fully document and justify the amounts requested in each category. Such documentation should be provided on additional page(s) immediately following the budget in the proposal and should be identified by line item. The documentation page(s) should be titled "Budget Explanation Page."

e. Revised budgets must be signed and dated by the authorized organizational representative and principal investigator and submitted in at least the original and two copies.

2. Budget Line Items

A full discussion of the budget and the allowability of selected items of cost is contained in *NSF Grants for Scientific Research* (NSF 78-41), *NSF Grant Policy Manual—GPM* (NSF 77-47), and other NSF program brochures and guidelines. Following is a brief outline of budget documentation requirements by line item. *(NOTE: All documentation or justification required on the line items below should be provided on the Budget Explanation Page.)*

A., B., and C. Salaries, Wages, and Fringe Benefits (GPM 511). On the Budget Explanation Page, list individually all senior personnel who were grouped under A5, the requested person-months to be funded, and rates of pay.

D. Permanent Equipment (GPM 512 and 204.2). While items exceeding $500 and 2 years' useful life are defined as permanent equipment, it is only necessary to list item and dollar amount for each item exceeding $1,000; items over $10,000 require certification. Fully justify.

E. Travel (GPM 514). Address the type and extent of travel (including consultant travel) and its relation to the project. Itemize by destination and cost and justify travel outside the United States and its possessions, Puerto Rico, and Canada. Include dates of foreign visits or meetings. Fare allowances are limited to round-trip, jet-economy rates.

F. Participant Support Costs (GPM 518). Normally participant support may only be requested under specific science education programs or for grants supporting conferences or symposia. Consult *Grants for Scientific Research* or specific program guidelines.

G. Other Direct Costs.

1. *Materials and Supplies* (GPM 513). Indicate types required and estimate costs.
2. *Publication Costs/Page Charges* (GPM 517). Estimate cost of preparing and publishing project results.
3. *Consultant Services* (GPM 516). Indicate name, daily compensation (limited to $245/day), and estimated days of service, and justify.
4. *Computer Services* (GPM 515). Include justification based on established computer service rates at the proposing institution. Include computer equipment leasing. Purchase of equipment is included under D.
5. *Subcontracts* (GPM 623). Must be approved in advance. Include a completed budget and justify details.
6. *Other.* Itemize and justify.

I. Indirect Costs (GPM 530). Specify current rate(s) and base(s). Use current rate(s) negotiated with the cognizant Federal negotiating agency. See *GPM* for special policy regarding grants to individuals, travel grants, equipment grants, doctoral dissertation grants, and grants involving participant support costs.

K. Residual Funds (GPM 253). For incremental funding requests on continuing grants, enter the amount estimated to be in *excess* of 10% at the planned amendment effective date. If less than 10%, indicate: "none." Residual funds should *not* be reflected in budget categories A-I. A justification for carryover of funds in excess of 10% is required. For standard grants (GPM 252), the total estimated residual amount should be shown.

L. Item L will be the same as Item J unless the Foundation disapproves the carryover of funds. If disapproved, Item L will equal J minus K.

NATIONAL SCIENCE FOUNDATION
Washington, D.C. 20550

FINAL PROJECT REPORT
NSF FORM 98A

PLEASE READ INSTRUCTIONS ON REVERSE BEFORE COMPLETING

PART I–PROJECT IDENTIFICATION INFORMATION

1. Institution and Address	2. NSF Program	3. NSF Award Number
	4. Award Period From To	5. Cumulative Award Amount
6. Project Title		

PART II–SUMMARY OF COMPLETED PROJECT *(FOR PUBLIC USE)*

PART III–TECHNICAL INFORMATION *(FOR PROGRAM MANAGEMENT USES)*

1. ITEM *(Check appropriate blocks)*	NONE	ATTACHED	PREVIOUSLY FURNISHED	TO BE FURNISHED SEPARATELY TO PROGRAM	
				Check (√)	Approx. Date
a. Abstracts of Theses					
b. Publication Citations					
c. Data on Scientific Collaborators					
d. Information on Inventions					
e. Technical Description of Project and Results	▨				
f. Other *(specify)*	▨				

2. Principal Investigator/Project Director Name *(Typed)*	3. Principal Investigator/Project Director Signature	4. Date

INSTRUCTIONS FOR FINAL PROJECT REPORT
(NSF FORM 98A)

This report is due within 90 days after the expiration of the award. It should be submitted in two copies to:

National Science Foundation
Division of Grants and Contracts
Award Accountability Branch
1800 G Street, N.W.
Washington, D.C. 20550

INSTRUCTIONS FOR PART I

These identifying data items should be the same as on the award documents.

INSTRUCTIONS FOR PART II

The summary (about 200 words) must be self-contained and intelligible to a scientifically literate reader. Without restating the project title, it should begin with a topic sentence stating the project's major thesis. The summary should include, if pertinent to the project being described, the following items:

- The primary objectives and scope of the project.
- The techniques or approaches used only to the degree necessary for comprehension.
- The findings and implications stated as concisely and informatively as possible.

This summary will be published in an annual NSF report. Authors should also be aware that the summary may be used to answer inquiries by nonscientists as to the nature and significance of the research. Scientific jargon and abbreviations should be avoided.

INSTRUCTIONS FOR PART III

Items in Part III may, but need not, be submitted with this Final Project Report. Place a check mark in the appropriate block next to each item to indicate the status of your submission.

a. Self-explanatory.
b. For publications (published and planned) include title, journal or other reference, date, and authors. Provide two copies of any reprints as they become available.
c. Scientific Collaborators: provide a list of co-investigators, research assistants and others associated with the project. Include title or status, e.g. associate professor, graduate student, etc.
d. Briefly describe any inventions which resulted from the project and the status of pending patent applications, if any.
e. Provide a technical summary of the activities and results. The information supplied in proposals for further support, updated as necessary, may be used to fulfill this requirement.
f. Include any additional material, either specifically required in the award instrument (e.g. special technical reports or products such as films, books, studies) or which you consider would be useful to the Foundation.

United States-Japan Program of Cooperation in Photoconversion and Photosynthesis

CHECK LIST FOR PROPOSAL SUBMISSION

[To assist in preparation; not to be submitted with proposal]

- ☐ Cover page (use form provided)
- ☐ Principal Investigator's telephone number on Cover page
- ☐ Required signatures on Cover page
- ☐ Proposal Information Page (use form provided)
- ☐ Table of Contents
- ☐ Project Summary (use NSF Form 4 provided/ less than 200 words/ intelligible to nonscientists)
- ☐ Project Description
- ☐ Expected Scientific and International Benefits
- ☐ Copies of correspondence with proposed Japanese host
- ☐ Information on previous professional visits to Japan
- ☐ Current and Pending research support
- ☐ Budget on NSF Form 1030
- ☐ Vitae and current list of relevant publications
- ☐ Ten copies of proposal, including original signed copy, to NSF Central Processing Section